Amendments to the Specification

1) Please replace paragraph 0002 with the revised paragraph 0002 below:

[0002] This invention was made with United States Government support awarded by the following agencies: Defense Advanced Research Projects Agency (DARPA) Grant No. F49620-02-1-0426; and Air Force Office of Scientific Research (AFOSR) Grant No. F49620-02-1-0426. The United States Government has certain rights in this invention.

2) Please replace paragraph 0040 with the revised paragraph 0040 below:

[0040] Additionally, each of the lenses 36, 46 includes a respective wall 37, 47 that supports its respective membrane 34, 44 with respect to its respective transparent rigid material 31, 41. The walls 37, 47 encircle their respective lenses 36, 46, which typically are circular or oval-shaped when viewed from the front of the lenses (albeit the lenses could have other shapes as well). The walls 37, 47 and transparent rigid materials 31, 41 respectively form fluidic lens chambers. The fluidic lens chambers (e.g., comprising walls 37, 47 and transparent rigid materials 31, 41), along with the membranes 34, 44, define respective internal cavities 38, 48 within which are the first fluidic media 32, 42. The walls 37, 47 of the fluidic lens chambers define respective channels 39, 49 by which the first fluidic media 32, 42 can enter and exit the cavities 38, 48. In certain embodiments, the walls 37, 47 can be formed within the frames 8 of the eyeglasses 5. Also as shown in FIGS. 3a and 3b, arrows 35, 45 respectively represent the directions of the flow (and/or pressure) of the media 32, 42 with respect to the cavities 38, 48 that are appropriate for causing the respective lenses 36, 46 to become convex and concave, respectively. As shown, the first fluidic medium 32 tends to flow into the cavity 38 causing the membrane 34 to expand outward while the first fluidic medium 42 tends to flow out of the cavity 48 tending to cause the membrane 44 to contract inward.

3) Please replace paragraph 0049 with the revised paragraph below:

[0049] Referring to FIG. 5, an exemplary hydraulic circuit 71 for controlling the fluid pressure within a fluidic adaptive lens such as one of the lenses 36,46 of FIGS. 3a and 3b is shown. As shown, the hydraulic circuit 71 includes a fluid reservoir 200 that is coupled by way of a first valve 11 to one of the channels 39/49 of the lens 36/46. Additionally, the fluid reservoir 200 is also coupled, by way of a minipump 3 and a second valve 13, to another of the channels 39/49 of

the lens 36/46. The minipump 3 (and possibly also the valves 11,13) is controlled by way of an electrical circuit 4. Also, a pressure sensor 9 is coupled to a junction between the valve 11 and the lens 36/46, allowing for the pressure within the lens to be sensed. Based upon the commands of the electrical circuit 4, the minipump 3 can operate to pump fluid from the reservoir 200 into the lens 36/46 or, alternatively, pump fluid from the lens back into the reservoir, assuming that the valve 13 is in an open state. Depending upon the opening and closing of the valve 11, fluid can also proceed from the lens back to the reservoir (or possibly in the opposite direction as well).

4) Replace paragraph 0056 with the revised paragraph 0056 below:

[0056] Likewise, with respect to the lens shown in FIG. 4b, in which there are three cavities, one of which are between the two membranes 62, the process of FIG. 6 could be further modified to include additional steps where (1) a middle cavity is formed between two membranes (which themselves would typically be separated by a wall), (2) the two membranes are then attached to the outer cavities, and (3) the appropriate formation of channels, connections to reservoirs and actuation components, and introduction of fluidic media are accomplished. It should further be noted that, typically, when multiple cavities exist, at least two different fluidic media having different refractive indices will be introduced into the different cavities from corresponding different reservoirs. Any of a variety of fluidic media can be employed. For example, one of the media can be water (e.g., deionized water) having an index of 1.3 and the other medium can be oil having a refractive index of about 1.6. Alternatively, other media including gaseous media such as air can be utilized. In alternate embodiments, the channels could also be formed prior to the combining step 25.

5) Replace paragraph 0083 with the revised paragraph 0083 below:

[0083] Although the fabrication process shown with reference to FIGS. 10a-10d is not exactly applicable to the construction of the lens structures 100, 110 and 120 shown in FIGS. 11, 12a and 12b or to the fabrication of the two-lens structures shown in FIGS. 13a- 13b, 14a-14c, and 15a-15d, a number of fabrication processes for such lens structures are possible. For example, FIG. 17 provides a flow chart showing one exemplary process for constructing the lens structures 100 and one of the two-lens structures 122 making use of a pair of those lens structures 100. Upon

starting the process, in a first step 141, cavities are formed on two separate pieces of transparent substrate. The diameter of the cavities can vary from a few hundred micrometers to a few centimeters depending on the application, and the thickness (depth) of the cavities could be in the range of a few hundred micrometers to a few millimeters. In a second step 142, a thin polymer membrane is formed. The membrane thickness typically is in the range of tens of micrometers to 100 μm and the membrane behaves elastically under stress, such that it can be used as a flexible diaphragm separating the cavities to be filled with media of different indices of refraction.